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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,416	10/31/2003	Thomas Y-T. Tam	H0004478	2098

7590 05/03/2007

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EXAMINER	
BUTLER, PATRICK	

ART UNIT	PAPER NUMBER
1732	

MAIL DATE	DELIVERY MODE
05/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/699,416	Applicant(s) TAM ET AL.	
	Examiner Patrick Butler	Art Unit 1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 February 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) *4,15,23 and 24* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-14, 16-22, and 25-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1-3, 5-9, 11, 25-30, and 34 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 and 5-7 of copending Application No. 11/205,952.

Although the conflicting claims are not identical, they are not patentably distinct from each other because Claims 1 and 3 are similar to Claims 1 and 3 of the copending application with the only difference being "about" two methyl groups, which would cause the two claims to overlap in scope, and "wherein the air circulation in said oven is in a turbulent" which would necessarily be the case in Application No. 11/205,952 given that a forced air convection oven is used. Claims 2 and 25-28 are similar to Claim 2 of the

copending application because their ranges both overlap for production greater than 2 g/min. and for the similarities as indicated in their dependencies as previously described. Claim 5 is similar to Claim 5 of the copending application in that the feed yarn has a tenacity that overlaps when it is greater than 6 g/d and for the similarities as indicated in their dependencies as previously described. Claims 6-9 are similar to Claim 6 of the copending application in that they both overlap when the range is 26-46 g/d and for the similarities as indicated in their dependencies as previously described. Claim 11 is similar to Claim 7 of the copending in that the both overlap when the feed yarn has i.v. greater than 12 g/d and when the feed yarn has a tenacity above 21 g/d and for the similarities as indicated in their dependencies as previously described. Claims 29 and 34 are similar to Claim 1 of the copending application in that the steps and formulas overlap in equation set I of the copending application. Claim 30 is similar to Claim 2 of the copending application because their ranges both overlap for production greater than 2 g/min. and for the similarities as indicated in their dependencies as previously described.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 5-14, 16-22, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kavesh et al. (U.S. Patent No. 4,551,296) in view of Maurer et al. (US Patent No. 4,411,854), van Breen et al. (US Patent No. 5,045,258), and Suwanda et al. (US Patent No. 5,505,900).

With respect to Claim 1, Kavesh teaches a process for drawing a multifilament gel-spun polyethylene with 22.6 IV (5 dl/g-35 dl/g) (see col. 23, lines 51-59) and extracting the first and second solvent from the filament (fewer than two methyl groups per thousand carbon atoms, and less than 2 wt. % of other constituents) (see Kavesh, Claim 1), passing said feed yarn at a speed of V_1 = 100 cm/min = 1 m/min into a heated tube (oven) having a length of L = 1.5 meters at a temperature of 150°C (130°C -160°C) (see col. 25, lines 12-40; col. 17, line 28; Example 533), passing said feed yarn continuously through said tube to have a stretch ratio of 2.5, which would necessarily provide an exit velocity of V_2 = 2.5 m/min, which would provide the following calculations:

L/V_1 = 1.5 m / 1 m/min = 1.5 min ($0.25 \le L/V_1 \le 20$, min)

V_2/V_1 = stretch ratio = 2.5 ($1.5 \le V_2/V_1 \le 20$)

$(V_2 - V_1)/L$ = (2.5 m/min – 1 m/min) / 1.5 min = 1 min^{-1} ($1 \le (V_2 - V_1)/L \le 60$, min^{-1})

$2L/(V_1+V_2)$ = 2 * 1.5 m / (1 m/min + 2.5 m/min) ≈ 0.86 min ($0.55 \le 2L/(V_1+V_2) \le 10$, min)

Kavesh teaches that the tube length of 1.5 m is employed (col. 17, line 28), but does not expressly teach a tube length of 1.5 m for Example 533. However, it would

have been obvious to one of ordinary skill in the art at the time the invention was made to combine Kavesh's 1.5 m tube with the requirement for a tube in Example 533 because as exemplified, it is a suitable tube length for stretching.

Moreover, Maurer et al. teaches using a similar oven length of 1 meter (see col. 6, lines 58-60), which similarly meets the limitations of the claim via the claim's inequality statements.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Maurer's oven length in the process of Kavesh because Kavesh requires a length for the stretching apparatus Maurer teaches a stretching oven length for successful practice of stretching polyethylene.

Kavesh teaches using nitrogen (see col. 23, lines 44-47) but does not expressly teach using air.

Van Breen et al. teaches using an environment in stretching that is either nitrogen or air (air oven) (see col. 4, lines 5-9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine van Breen's air with Kavesh's process of stretching because both are suitable environments for stretching (see van Breen, col. 4, lines 5-9).

Kavesh teaches having the environment blanket the stretched yarn (see col. 23, lines 44-47) but does not expressly teach forcing the air.

Suwanda teaches drawing yarn in a forced air convection oven (forced convection air oven; wherein the air circulation in said oven is in a turbulent state) (see col. 7, lines 16-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suwanda's practice of using a forced air convection oven in the process of Kavesh in order to control the air temperature (see Suwanda, col. 7, lines 16 and 17).

With respect to Claims 2, Kavesh teaches that the yarn for Example 533's denier was 216 and was 48 filaments. The mass throughput is therefore approximately:

216 denier * (1 g/ 9000 m) / denier * 2.5 m/min = 0.06 g/min

This is for 48 filaments, but Kavesh teaches the production of yarns of 16, 120, and 240 filaments (see col. 7, lines 57-59), which would yield a mass flow of 0.02 g/min, 0.15 g/min, and 0.3 g/min, which would read on the claim (greater than 0.25 g/min).

With respect to Claim 3, as the fibers are passing through a tube unassisted by rollers inside the tube, no increasing tension aside from air drag would occur.

With respect to Claim 5, Kavesh teaches a process for drawing a multifilament gel-spun polyethylene with 22.6 IV (8 dl/g-30 dl/g) (see col. 23, lines 51-59) and extracting the first and second solvent from the filament (fewer than one methyl groups per thousand carbon atoms, and less than 1 wt. % of other constituents) (see Kavesh, Claim 1). Kavesh teaches that the tenacity of the feed yarn is 21 g/d (5-76 g/d) (see Example 523 used to feed Example 533).

With respect to Claims 6-8, Kavesh teaches that the feed yarn is 21 g/d (11-66 g/d [Claim 6], 16-56 g/d [Claim 7], 21-51 [Claim 8]) (see Example 523 used to feed Example 533).

With respect to Claim 9, Kavesh teaches a process for drawing as previously described as applied to Claim 5. However, the feed yarn's tenacity is 21 g/d.

Kavesh teaches that increased drawing provides for increased tenacity (compare col. SR and Ten g/d in col. 25, lines 30-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine increased stretching in Example 523 in order to obtain higher feed yarn tenacity in Example 533. The motivation would have been to obtain an overall higher tenacity.

With respect to Claim 10, Kavesh teaches a process for drawing a multifilament gel-spun polyethylene with 22.6 IV (10-25 dl/g) (see col. 23, lines 51-59).

With respect to Claim 11, Kavesh teaches a process for drawing a multifilament gel-spun polyethylene with 22.6 IV (12-20 dl/g) (see col. 23, lines 51-59) and extracting the first and second solvent from the filament (fewer than 0.5 methyl groups per thousand carbon atoms, and less than 0.5 wt. % of other constituents) (see Kavesh, Claim 1). Kavesh teaches that the tenacity of the feed yarn is 21 g/d (21-51 g/d) (see Example 523 used to feed Example 533).

With further respect to Claim 34, the Claims are met via their limitations being broader than Claim 1, particularly equation set I. With respect to the preamble transitional phrase "consisting essentially of," the invention of Kavesh has not been clearly indicated by Applicant's Specification to contain any steps that would materially affect the basic and novel characteristics of the claimed invention as previously claimed.

Thus, for purposes of applying prior art, "consisting essentially of" will be construed as "comprising" (See MPEP 2111.03).

With respect to Claim 12, Kavesh teaches a process for drawing a multifilament gel-spun polyethylene with 22.6 IV (5 dl/g-35 dl/g) (see col. 23, lines 51-59) and extracting the first and second solvent from the filament (fewer than two methyl groups per thousand carbon atoms, and less than 2 wt. % of other constituents) (see Kavesh, Claim 1), passing said feed yarn at a speed of V_1 = 100 cm/min = 1 m/min into a heated tube (oven) having a length of L = 1.5 meters at a temperature of 150°C (130°C -160°C) (see col. 25, lines 12-40; col. 17, line 28; Example 529), passing said feed yarn continuously through said tube to have a stretch ratio of 1.5, which would necessarily provide an exit velocity of V_2 = 1.5 m/min, which would provide the following calculations:

$L/V_1 = 1.5\ m / 1\ m/min = 1.5\ min\ (1 \leq L/V_1 \leq 20,\ min)$

$V_2/V_1 = \text{stretch ratio} = 1.5\ (1.5 \leq V_2/V_1 \leq 20)$

$(V_2 - V_1)/L = (1.5\ m/min - 1\ m/min) / 1.5\ min \approx 0.33\ min^{-1}\ (0.01 \leq (V_2 - V_1)/L \leq 1,\ min^{-1})$

$2L/(V_1+V_2) = 2 * 1.5\ m / (1\ m/min + 1.5\ m/min) = 1.2\ min\ (1.1 \leq 2L/(V_1+V_2) \leq 10,\ min)$

Kavesh teaches that the tube length of 1.5 m is employed (col. 17, line 28), but does not expressly teach a tube length of 1.5 m for Example 533. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made

to combine Kavesh's 1.5 m tube with the requirement for a tube in Example 533 because as exemplified, it is a suitable tube length for stretching.

Moreover, Maurer et al. teaches using a similar oven length of 1 meter (see col. 6, lines 58-60), which similarly meets the limitations of the claim via the claim's inequality statements.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Maurer's oven length in the process of Kavesh because Kavesh requires a length for the stretching apparatus Maurer teaches a stretching oven length for successful practice of stretching polyethylene.

Kavesh teaches using nitrogen (see col. 23, lines 44-47) but does not expressly teach using air.

Van Breen et al. teaches using an environment in stretching that is either nitrogen or air (air oven) (see col. 4, lines 5-9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine van Breen's air with Kavesh's process of stretching because both are suitable environments for stretching (see van Breen, col. 4, lines 5-9).

Kavesh teaches having the environment blanket the stretched yarn (see col. 23, lines 44-47) but does not expressly teach forcing the air.

Suwanda teaches drawing yarn in a forced air convection oven (forced convection air oven; wherein the air circulation in said oven is in a turbulent state) (see col. 7, lines 16-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suwanda's practice of using a forced air convection oven in the process of Kavesh in order to control the air temperature (see Suwanda, col. 7, lines 16 and 17).

With respect to Claim 13, Kavesh teaches that the yarn for Example 529's denier was 366 and was 48 filaments. The mass throughput is therefore approximately:

366 denier * (1 g/ 9000 m) / denier * 1.5 m/min ≈ 0.053 g/min

This is for 48 filaments, but Kavesh teaches the production of yarns of 16, 120, and 240 filaments (see col. 7, lines 57-59), which would yield a mass flow of 0.02 g/min, 0.15 g/min, and 0.31 g/min, which would read on the claim (greater than 0.25 g/min).

With respect to Claim 14, as the fibers are passing through a tube unassisted by rollers inside the tube, no increasing tension aside from air drag would occur.

With respect to Claim 16, Kavesh teaches a process for drawing a multifilament gel-spun polyethylene with 22.6 IV (8 dl/g-30 dl/g) (see col. 23, lines 51-59) and extracting the first and second solvent from the filament (fewer than one methyl groups per thousand carbon atoms, and less than 1 wt. % of other constituents) (see Kavesh, Claim 1). Kavesh teaches that the tenacity of the feed yarn is 21 g/d (5-76 g/d) (see Example 523 used to feed Example 529).

With respect to Claims 17-19, Kavesh teaches that the feed yarn is 21 g/d (11-66 g/d [Claim 17], 16-56 g/d [Claim 18], 21-51 [Claim 19]) (see Example 523 used to feed Example 529).

With respect to Claim 20, Kavesh teaches a process for drawing as previously described as applied to Claim 12. However, the feed yarn's tenacity is 21 g/d.

Kavesh teaches that increased drawing provides for increased tenacity (compare col. SR and Ten g/d in col. 25, lines 30-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine increased stretching in Example 523 in order to obtain higher feed yarn tenacity in Example 529. The motivation would have been to obtain an overall higher tenacity.

With respect to Claim 21, Kavesh teaches a process for drawing a multifilament gel-spun polyethylene with 22.6 IV (10-25 dl/g) (see col. 23, lines 51-59).

With respect to Claim 22, Kavesh teaches a process for drawing a multifilament gel-spun polyethylene with 22.6 IV (12-20 dl/g) (see col. 23, lines 51-59) and extracting the first and second solvent from the filament (fewer than 0.5 methyl groups per thousand carbon atoms, and less than 0.5 wt. % of other constituents) (see Kavesh, Claim 1). Kavesh teaches that the tenacity of the feed yarn is 21 g/d (21-51 g/d) (see Example 523 used to feed Example 529).

Claims 25-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kavesh et al. (U.S. Patent No. 4,551,296) in view of Maurer et al. (US Patent No. 4,411,854), van Breen et al. (US Patent No. 5,045,258), and Suwanda et al. (US Patent No. 5,505,900) as applied to Claim 1 above, and further in view of Bory et al. (US Patent No. 4,248,577).

With respect to Claims 25-29, Kavesh teaches mass throughput for 240 filaments of 0.3 g/min as previously described. Kavesh does not expressly teach a mass throughput of at least 0.42 g/min (Claim 25), 0.5 g/min (Claims 26 and 29), 1 g/min (Claims 27 and 30) or 4 g/min (Claim 28).

Bory teaches using a spinneret for gel spinning (see col. 5, lines 57-59) and spinning up to 1,000,440 filaments (see col. 6, lines 40-47), with examples such as 3,750 filaments (see col. 6, line 66 through col. 7, line 2). As combined with Kavesh, the mass throughput is therefore approximately:

0.3 g/min * 3,750 filaments in new spinneret / 240 filaments in replaced spinneret

= 4.7 g/min

This mass throughput of 4.7 g/min reads on a mass throughput of at least 0.42 g/min (Claim 25), 0.5 g/min (Claims 26 and 29), 1 g/min (Claims 27 and 30) or 4 g/min (Claim 28)

With further respect to Claims 29 and 30, the Claims are met via their limitations being broader than Claim 1, particularly equation set I.

With respect to Claim 31, as previously described, Suwanda teaches drawing yarn in a forced air convection oven (wherein the air circulation in said oven is in a turbulent state) (see col. 7, lines 16-21).

With respect to Claim 32, Kavesh teaches that the process draws the yarn at a stretch ratio of 1.5, thus to at least some degree, the yarn-to-be-drawn is essential undrawn before the process (feed yarn is an essentially undrawn state prior to passing said feed yarn into said oven) (see col. 25, lines 12-40; Example 529). If it were not

essentially undrawn, then any subsequent drawing would destroy the fiber. Moreover, as illustrated in subsequent examples, even more drawing could be done, such as a ratio of 2.5 (see col. 25, lines 12-40; Example 533).

With respect to Claim 33, Kavesh teaches that the xerogel fibers 47 (feed yarn) are wound on a spool 52 and a plurality of spools (creel) is fed into the stretching line (oven) (see col. 8, lines 30-39; Fig. 5).

Response to Arguments

The declaration under 37 CFR 1.132 filed 05 February 2007 is insufficient to overcome the rejections of claims 1-3, 5-14, 16-22, and 25-34 based upon the 35 U.S.C. 103(a) rejections as set forth in the last Office Action.

With respect to the Declaration's formalities, it is unclear why the warning (page 4, last paragraph) is only parenthetically included.

Indications of the declaration under 37 CFR 1.132 filed 05 February 2007 appear to be on the grounds that:

A) The heat transmission by Kavesh is an order of magnitude lower than under turbulent gas flow conditions. The lower transmission's non-uniform temperature within the yarn's fibers causes limitation on the extent of draw, which is opposite of the higher transmission's minimized temperature differences within the yarn's fibers and higher draw. Thus, a forced convection oven under turbulent flow of air is not obvious over the references teachings.

B) Since there is variation in filament-to-filament tenacity, the tenacity of a yarn generally decreases with the increased numbers of filaments. To obtain consistent

increased tenacity, the speed would need to be decreased. Moreover, the increased ends would necessitate slower production speeds.

C) The draw ratio of Example 523 was the maximum that could be run without filament breakage.

D) Achieving the high mass throughputs achieved in the application is surprising.

The indications of the declaration are addressed as follows:

A) The declaration under 37 CFR 1.132 filed 05 February 2007 refer(s) only to a point within the claimed range. Thus, there is no showing that the objective evidence of nonobviousness is commensurate in scope with the claims. See MPEP § 716. For instance, the calculation in the Appendix, section II, indicates that the temperature used to calculate the Prandtl Number for air was 151 °C. However, Applicant claims 130-160 °C.

A) Appropriate weight is given to the opinion evidence. However, as previously described, drawing of a PE yarn in turbulent air is taught by Suwanda. To clarify, Suwanda's teaching of forced air flow is turbulent as evidenced by Perry (Perry's Chemical Engineers' Handbook, Sixth Edition, page 10-14, Forced Convection section, first paragraph). Therefore, whether drawing PE in a forced convection oven is obvious or not is moot as it is taught by Suwanda.

B) Appropriate weight is given to the opinion evidence on the limit of operability. Kavesh's scaled production is 0.3 g/min. If slowed, the process's productivity would still exceed the claimed production of 0.25 g/min.

C) The importance of filament breakage is related to its degree. As the statement is unqualified to the time required or the degree of breakage, it is not clear that even Applicant's claimed process could perpetually run without filament breakage.

D) The declaration under 37 CFR 1.132 filed 05 February 2007 refer(s) only to the high mass throughputs described in the above referenced application and not to the individual claims of the application. Thus, there is no showing that the objective evidence of nonobviousness is commensurate in scope with the claims. See MPEP § 716.

In view of the foregoing, when all of the evidence is considered, the totality of the rebuttal evidence of nonobviousness fails to outweigh the evidence of obviousness.

Applicant's arguments filed 05 February 2007 have been fully considered but they are not persuasive.

Applicant argues with respect to the 35 USC 103 rejection. Applicant's arguments appear to be on the grounds that:

1) The claimed feature of the polyethylene having "fewer than two methyl groups per thousand carbon atoms" refers to the polyethylene polymer comprising the yarn and not to any residual solvent or material in the yarn after extraction. Thus, Kavesh et al do not teach this feature of the polyethylene.

2) As discussed in the Declaration, the substantial differences between drawing polyethylene fibers in air under turbulent conditions versus drawing in a tube under a nitrogen blanket are not obvious.

3) As discussed in the Declaration, it is incorrect to assume that mass throughput would vary linearly with increased filaments, that tenacity would vary linearly with increased filaments, and that the mass throughput would vary linearly with increased filaments.

4) As discussed in the Declaration, increasing the draw ratio of Example 523 of Kavesh could not be done without filament breakage.

5) As discussed in the Declaration, the instant Application contains throughput levels that are surprising to Dr. Kavesh that are brought about evidently by higher heat transfer and more uniform temperature via drawing under the instantly claimed conditions.

6) To follow Maurer would require a large amount of filler to practice Maurer's process, which would not meet the claimed process's product.

7) Maurer's fiber is temperature controlled in an oven rather than a tube.

8) Maurer does not suggest stretching in the presence of air in a turbulent state.

9) Van Breen is directed to fibers of an alternating copolymer of ethylene and carbon monoxide as opposed to PE fibers, thus there is no reason to combine Van Breen and Kavesh.

10) Moreover, Van Breen only briefly mentions air and teaches away from its use given Van Breen's preference for inert and nitrogen.

11) Van Breen does not suggest stretching in the presence of air in a turbulent state.

12) Suwanda is directed to fibers of crosslinked polyethylene as opposed to polyethylene fibers, thus there is no reason to combine Suwanda and Kavesh.

13) It is not clear that Suwanda teaches drawing in a forced convection oven since the second stage draw occurs between the second godet 24 and belt puller 28 (see col. 7, lines 14-16) yet Fig. 2 shows the forced air convection oven 26 located downstream of the draw zone.

14) Suwanda does not disclose that the air in the oven is in a turbulent state, which can be in a laminar flow regime as evidenced by Perry (Perry's Chemical Engineers' Handbook, Sixth Edition, page 10-15).

15) Applicant's specification clearly teaches the drawing process conditions that are the basic and novel for the invention.

The Applicant's arguments are addressed as follows:

1) Although Applicant's interprets "having" to represent the methyl groups being part of the chain, the Examiner's interpretation of "having" to mean that in general methyl groups, such as ones residual from solvent after extraction, is valid as well. As the only methyl present in Kavesh is in one solvent that is removed from the yarn, Kavesh meets the limitation both because it contains polyethylene without additives and because it removes the methyl in the process of forming the yarn.

Moreover, since Applicant's interpretation of "polyethylene having…less than 2 wt. % other constituents" as not applying to the polymer structure, such an interpretation of the methyl groups is at least as valid.

2-5) The indications of the declaration are addressed as described above with the totality of the rebuttal evidence of nonobviousness fails to outweigh the evidence of obviousness.

6) Maurer is not relied upon for the filament content. Kavesh is relied upon for filament content. Instead, Maurer is relied upon for oven length for polyethylene yarns and that such length is widely relied upon from Kavesh's to Maurer's examples.

6) Claimed process does not require that there be no filler as the "having" applies only to the chemical structure of the polymer. Maurer's filler, such as calcium carbonate, is not part of the polymer (see col. 3, lines 54-68).

7) Since tube indicates a general shape and an "oven" does not indicate a shape, the two terms "tube" and "oven" are not mutually exclusive to each other and thus do not teach conflicting embodiments.

8 and 11) Suwanda is relied upon rather than Maurer or Van Breen for teaching of turbulent forced air flow as evidenced by Perry (Perry's Chemical Engineers' Handbook, Sixth Edition, page 10-14, Forced Convection section, first paragraph).

9) Van Breen is analogous art because it is also broadly directed to stretching in air, and Van Breen indicates that both air and nitrogen are suitable.

10) Van Breen is relied upon for all that it teaches, which includes all embodiments regardless of preferred embodiments.

12) Suwanda is analogous art because it is also broadly directed to stretching polyethylene.

13) Suwanda is relied upon for all that is taught, which includes the teaching of the forced air convection oven for drawing (see col. 7, lines 14-21).

14) Perry provides evidence that most of a forced air flow is turbulent (Perry's Chemical Engineers' Handbook, Sixth Edition, page 10-14, Forced Convection section, first paragraph).

15) The interpretation of "consisting essentially of" is focused on whether the basic and novel features are clearly indicated as such rather than whether they are present in the specification. The presence of the claimed elements or objectives within Applicant's Specification is not in question.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Butler whose telephone number is (571) 272-

8517. The examiner can normally be reached on Mon.-Thu. 7:30 a.m.-5 p.m. and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PB
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CHRISTINA JOHNSON
SUPERVISORY PATENT EXAMINER
4/30/07